What is claimed is:

1. A method of analyzing a sample, comprising:

maintaining an internal pressure of a sample chamber at a predetermined level through a control valve,

injecting the sample into the sample chamber,

holding the control valve at an opening degree before the sample is injected into the sample chamber for a predetermined period of time so that a substantial amount of the sample injected to the sample chamber can be sent to a detector without loosing through the control valve.

2. A method of analyzing a sample according to claim 1, further comprising maintaining the internal pressure at the predetermined level again after the predetermined period of time.

3. A method of analyzing a sample according to claim 2, further comprising:

detecting an increment in the internal pressure upon injecting the sample into the sample chamber,

comparing the increment with a predetermined threshold, and

holding the control valve at the opening degree before the sample is injected when the increment exceeds the predetermined threshold.

4. A method of analyzing a sample according to claim 3, wherein said control valve is maintained at the predetermined level by a closed loop control through detections of the control valve and the internal pressure of the sample chamber.

5. A method of analyzing a sample according to claim 4, wherein when said increment exceeds the predetermined threshold, a timer is started to shut off the closed loop control for said predetermined period of time.

6. A method of analyzing a sample according to claim 3, wherein when the increment in the sample chamber is detected, pressure increase in the sample chamber is expected with reference to a speed thereof to thereby quickly actuate the control valve.

7. A method of analyzing a sample according to claim 1, wherein said sample is automatically injected with an auto-sampler, and the internal pressure in the sample chamber is directly compared with the predetermined threshold to control the control valve.

8. A method of analyzing a sample according to claim 1, wherein said sample is automatically injected with an auto-sampler, and upon actuation of the auto-sampler, the control valve is held for the predetermined time at said opening degree.